

UAC
4/28/05

A PROBE FOR DETECTING A HIGHLY ORDERED STRUCTURAL
SITE OF A SINGLE STRANDED NUCLEIC ACID OF A GENE, AND
A METHOD AND A DEVICE FOR DETECTING THE SAME

BACKGROUND OF THE INVENTION

This Application is a divisional of 09/313,992, filed 5/19/99, now patent US 6,294,670.

1. Field of the Invention

The invention relates to a probe for detecting a highly ordered structural site of a single stranded nucleic acid of a gene, a method for detecting the same using the probe, and a device for detecting the same.

2. Related Arts

Sensors and sensing techniques have been utilized in every field of industries. In particular in biotechnology field, a high-sensitivity sensor system utilizing an enzyme reaction has been established. Recently, importance of gene sensing is increasing in applications such as gene therapy and gene diagnosis. Up to now, "DNA probe method" has been accepted as such gene sensing method.

A highly ordered structural site of a single stranded nucleic acid is a region located in a part of high-order structure of a DNA or RNA where the bases of the single stranded nucleic acids are not stacked, the region including a mismatch structure of an oncogenic DNA, a hairpin structure of a viral RNA and a bulge.

Such DNA probe method is mostly carried out by manual operations. Consequently, it has been demanded a gene sensor other than the DNA probe type sensor for detecting efficiently a specialized nucleic acid region of a gene. However, such sensor has not yet been reported or patented.

The object of the invention is to provide a detection probe for detecting a highly ordered structural site of a single stranded nucleic acid of a gene, and to provide a detection method and device using such probe.